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EXAMINER	
WONG, LESLIE	
ART UNIT	**PAPER NUMBER**
2167	

DATE MAILED: 01/21/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Appli ation No.	Applicant(s)	
	10/002,290	THOMPSON ET AL.	
	Examiner	Art Unit	
	Leslie Wong	2167	

-- Th MAILING DATE of this communication appears on th cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *22 September 2004*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-18* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-18* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *22 September 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

1. Receipt of Applicant's Amendment, filed 22 September 2004, is acknowledged.

2. Applicants' amendments, submitted on 22 September 2004, have overcome to the objections in connection with the drawings and the embedded hyperlink in the Specification. Examiner hereby withdrawn the objections that were given on the Office Action dated 23 July 2004.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to

consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

4. Claims 1-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Bolle et al.** ("Bolle") (U.S. Patent 6,675,174 B1) in view of **Parker et al.** ("**Parker**") (US 20020073106A1).

Regarding claim 1, **Bolle** teaches a method of providing an identifier for a file, said method comprising:

a). **'accessing said file'** as the detection system takes as input one or more temporal digital target media sources M stored on media source (col. 9, lines 63-65);

b). **'deriving a frequency representation of a portion of the entire set of data for said file'** as generating a representation of the reference media segments in S by performing a key-framing process (col. 11, lines 1-9; Figs 4A-4B and 5);

c). **'providing a file name for said file'** as the recognition or search process generates the domain and feature codes (i.e., filename) for the present key interval Ot of the target media stream M (i.e., file)(col. 23, lines 9-12);

d). **'providing said file name in a directory'** as the domain and feature codes (i.e., filename) that are computed from a media interval and these codes are stored in different structures such as a tree structure, a graph structure, and table structure etc... (i.e., directory) (col. 18, lines 11-15);

e). **'associating said frequency representation of said portion of said file with said file name so that said frequency representation is searchable within**

said directory for use in locating said file' as from each key interval, a set of features is extracted from a number of regions in the key intervals. These regions can be different for each feature and are indexed by domain codes. The representations (i.e., pairs of feature and domain) for the different reference media segments Si are stored in a segment index table (col. 7, lines 57-65; col. 11, lines 21-23; Fig. 3)

Bolle does not explicitly teach the steps of:

c). file name is representative of the entire set of data for said file;

d). directory is accessible for retrieving said entire set of data for said file'.

Parker, however, teaches the steps of:

c). **'file name is representative of the entire set of data for said file'** as a file Name option allows single data files to be captured individually by their level of importance (¶s 0125, 0212-0217);

d). **'directory is accessible for retrieving said entire set of data for said file'** as initiate retrieval program to allow retrieval into original location, default retrieval directory (¶s 0155, 0212-217).

It would have been obvious to one of ordinary skill in the art at the time of the invention was made to combine the teachings of the cited references because **Parker's** teaching would have allowed **Bolle's** to intelligently data inventory and manage assets by periodically inventory a plurality of hardware, software, and data files by inventorying all files on-site on a selected hard drive inventory path of a database and comparing

each file on the inventory path to an inventory database to determine if the file exists from a previous inventory as suggested by **Parker** (¶s 0002, 0010, 0045).

Regarding claim 2, **Bolle** further teaches wherein said '**frequency representation comprises a Fast Fourier Transform'** as audio signatures are also computed by utilizing the fast Fourier transform. The audio signatures are handled similarly to the video signatures (col. 5, lines 56-57).

Regarding claim 3, **Bolle** further teaches **'configuring an address listing with an identifier for said frequency representation serving as metadata in said address listing'** as the domain code, feature code (i.e., metadata) are populated by segment identifier of the corresponding set of code pairs. These pairs are used to populate segment index table (i.e., address listing) (col. 8, lines 1-3; col. 7, lines 57-65; col. 11, lines 21-23; Fig. 3).

Regarding claim 4, **Bolle** teaches a method of searching for a video file, said method comprising:

a). **'obtaining a first frequency representation of a desired video file'** as the domain and feature codes that are computed from a media interval and these codes are stored in different structures such as a tree structure, a graph structure, and table structure etc... for later retrieval. A search algorithm uses the segment index table (i.e., obtain desired frequency representation) for measuring the similarity between each of

the reference media segments and sections of the target media stream (col. 18, lines 11-15; col. 10, lines 5-11);

b). **'accessing a first unknown file'** as the recognition phase recognizes known media segments in the input target stream by processing the *input stream to extract features* and using the segment index table (col. 9, lines 45-48);

c). **'obtaining a second frequency representation of said unknown file'** as generating a representation of the reference media segments in stream S by performing a key-framing process (col. 11, lines 1-9; Figs 4A-4B and 5);

d). **'comparing said first frequency representation with said second frequency representation'** as a target media stream M is compared to the known set of reference media segments S (col. 21, line 61 – col. 22, line 4); and

e). **'determining from said comparing whether said unknown file is said desired video file'** as taking the domain and feature codes and searching for matches in the segment index table T. The result of the search process is the winner table comprises a list of top L key intervals of the reference segments that best match the target media key interval under consideration at Ot (col. 23, lines 45-52).

f). **Bolle** does not explicitly teach "eliminating said unknown file as a redundant file".

Parker, however, teaches **'eliminating said unknown file as a redundant file'** as the inventorying process enables the system to issue warnings for deleted files, possible corruption of files, and unidentified possibly valued asset files (abstract).

It would have been obvious to one of ordinary skill in the art at the time of the invention was made to combine the teachings of the cited references because **Parker's** teaching would have allowed **Bolle's** to effectively utilize the storage capacity by deleting corrupted files or *unidentified* files ¶ 0005, 0101 and abstract.

Regarding claim 5, **Bolle** further teaches wherein said **'obtaining said first frequency representation of said desired video file comprises performing a Fast Fourier Transform algorithm'** as audio signatures are also computed by utilizing the fast Fourier transform. The audio signatures are handled similarly to the video signatures (col. 5, lines 56-57).

Regarding claim 6, **Bolle** further teaches wherein said **'obtaining said first frequency representation comprises performing a Discrete Fourier Transform'** as for each interval, the discrete Fourier transform is computed which gives a discrete function |F(s)| (col. 17, lines 37-40).

Regarding claim 7, **Bolle** further teaches wherein said **'comparing said first frequency representation with said second frequency representation comprises comparing a range of frequencies of said first and second frequency representations'** as step 1205 in the search process which sets the range of reference segment key intervals to be searched in the segment index table. This ensures that all the key intervals in the segment index table are matched against each of the key

interval extracted from the target media stream (col. 23, lines 45-52; col. 24, lines 21-25 and lines 31-34).

Regarding claim 8, **Bolle** further teaches **'decoding said unknown file'** as the incoming media stream could potentially be in any format, depending on the format of the media, it is processed through the corresponding decoder (col. 22, lines 44-60).

5. Claims 9-10, 14-15, and 17-18 are rejected under 35 U.S.C. 102(e) as being anticipated by **Burrows** (U.S. Patent Applicant US 20020049753A1) and in view of **Ryan** (U.S. Patent 6,381,367).

Regarding claim 9, **Burrows** teaches a method of determining redundancies in a content object directory, said method comprising:

a). **'accessing a plurality of files stored on a memory, wherein each of said files is configured so as to be identified by a fingerprint'** as parsing a current page to determine the fingerprint of the current page (¶s 378 and 379);

b). **'for each of said files, determining said fingerprint'** as parsing a current page to determine the fingerprint of the current page (¶s 378 and 379) ;

c). **'establishing a redundancy standard so as to indicate whether any two of said fingerprints of said files are redundant of one another'** as a duplicate page is defined as a page having a different URL address, but having identical fingerprint as a previously indexed master page (¶ 379, lines 1-3);

d). **'comparing said fingerprints determined for each of said files'** as compare the fingerprint of the current page with the fingerprints of previously indexed pages (¶ 381, lines 3-5);

e). **'determining redundant files based upon said comparing said fingerprints and said redundancy standard'** as if there is no identical fingerprint entry in the index, then the current page is different. Otherwise, if the current page is a duplicate, then generate the pairs [location, fingerprint], and [location, address] (¶ 382, lines 1-2 and 4-5).

Burrows does not explicitly teach wherein **files having non-identical fingerprints are redundant of one another.**

Ryan, however, teaches **'files having non-identical fingerprints are redundant of one another'** as the local spatial distortion technique can be used to identify the origin of illegal copies of proprietary photographs (col. 6 lines 54-57; col. 6, lines 23-36).

It would have been obvious to one of ordinary skill in the art at the time of the invention was made to combine the teachings of the cited references because **Ryan's** teaching would have allowed **Burrows's** to facilitate identification of source of any illegal copies by using the local spatial distortion technique as suggested by **Ryan** at col. 6 lines 54-57.

Regarding claim 10, **Burrows** further teaches **'deleting at least one redundant file from said memory'** as determine if the page (i.e., file) to be deleted is a master

page. If true, then generate a reissue request. Otherwise, determine if the page to be deleted is the next recorded duplicate of the page to be deleted and there is no master page proceed with step 2520 (¶s 383 and 384 and Fig. 25).

Regarding claim 14, **Bolle** further teaches wherein said accessing a plurality of files comprises **'accessing a plurality of files comprising video data'** as the pages can encode multimedia items including digitized graphic, audio or video components (¶ 0071).

Regarding claim 15, **Bolle** further teaches wherein said accessing a plurality of files comprises **'accessing a plurality of files comprising audio data'** as the pages can encode multimedia items including digitized graphic, audio or video components (¶ 0071).

Regarding claim 17, **Burrows** further teaches **'appending a fingerprint as metadata to at least one directory listing'** as a search in the index for the metaword which expresses the value of the fingerprint (¶381).

Regarding claim 18, **Burrows** further teaches **'cataloging in a database said fingerprint with the file from which said fingerprint was generated'** as index of the database can be search for the metaword which expresses the value of the fingerprint (¶s 101, 122 and 381).

6. Claims 11 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Burrows** (U.S. Patent Applicant US 20020049753A1) in view of **Ryan** (U.S. Patent 6,381,367) as applied to claims 9-10, 14-15, and 17-18 above and in view of **Bolle et al.** ("Bolle") (U.S. Patent 6,675,174 B1).

Regarding claim 11, **Burrows and Ryan** do not explicitly teach utilizing a Fast Fourier Transform algorithm to compute said fingerprint.

Bolle, however, teaches **'utilizing a Fast Fourier Transform algorithm to compute said fingerprint'** as audio signatures are also computed by utilizing the fast Fourier transform. The audio signatures are handled similarly to the video signatures (col. 5, lines 56-57; col. 17, lines 30-31).

It would have been obvious to one of ordinary skill in the art at the time of the invention was made to combine the teachings of the cited references because **Bolle's** teaching would have allowed **Burrows- Ryan's** to compute audio or video signatures to identify the content for each video segment or audio signal in order to perform similarity match to recognize known media segments in the input target stream as suggested by **Bolle** at col. 9, lines 45-48; col. 7, lines 18-22.

Regarding claim 16, **Burrows and Ryan** do not explicitly teach establishing a redundancy standard comprises determining a range of frequencies in a pattern of frequencies from a Fast Fourier Transform for comparison of said fingerprints.

Bolle, however, teaches wherein said '**establishing a redundancy standard comprises determining a range of frequencies in a pattern of frequencies from a Fast Fourier Transform for comparison of said fingerprints'** as step 1205 in the search process which sets the range of reference segment key intervals to be searched in the segment index table (col. 23, lines 45-52; col. 24, lines 21-25 and lines 31-34).

It would have been obvious to one of ordinary skill in the art at the time of the invention was made to combine the teachings of the cited references because **Bolle's** teaching would have allowed **Burrows- Ryan's** to ensure that all the key intervals in the segment index table are matched against each of the key interval extracted from the target media stream as suggested by **Bolle** at col. 23, lines 32-35.

7. Claims 12 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Burrows** (U.S. Patent Applicant US 20020049753A1) in view of **Ryan** (U.S. Patent 6,381,367) as applied to claims 9-10, 14-15, and 17-18 above and in view of **Rhoads et al.** ("Rhoads") (U.S. Patent Application 2002/0032864 A1).

Regarding claim 12, **Burrows** and **Ryan** do not explicitly teach utilizing a watermark as said fingerprint.

Rhoads, however, teaches **'utilizing a watermark as said fingerprint'** as watermark can convey a fingerprint and auxiliary data as well (¶ 0029 to 0033, and 0036).

It would have been obvious to one of ordinary skill in the art at the time of the invention was made to combine the teachings of the cited references because **Rhoads's** teaching would have allowed **Burrow- Ryan's** to improve the efficiency and cost of the detecting system by using the embedded fingerprint data or watermark for each frame to allow a streaming system to check the song for identification and if that identification is absent or not authenticated, the system can check for the watermark and/or calculate the fingerprint as suggested by **Rhoads** at ¶0036.

Regarding claim 13, **Burrows** and **Ryan** do not explicitly teach utilizing cyclical redundancy check data as said fingerprint.

Rhoads, however, teaches **'utilizing cyclical redundancy check data as said fingerprint'** as the fingerprint data or watermark data stored in the header may be encrypted and/or authenticated by a digital signature such as a complete hash, or a few check bits or cyclical redundancy check (CRC) bits (¶ 30).

It would have been obvious to one of ordinary skill in the art at the time of the invention was made to combine the teachings of the cited references because **Rhoads's** teaching would have allowed **Burrows- Ryan's** to enable encryption of the fingerprint data to provide added security by utilizing a digital signature such as CRC bits as suggested by **Rhoads** at ¶ 30, lines 1-4 and 31.

Response to Argument

8. Applicant's arguments with respect to claims 1-18 have been considered but are moot in view of the new ground(s) of rejection.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Leslie Wong whose telephone number is (571) 272-4120. The examiner can normally be reached on Monday to Friday 9:30am - 6:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John E Breene can be reached on (571) 272-4107. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Leslie Wong
Patent Examiner
Art Unit 2167

LW
January 14, 2005

Primary Examiner